

## CLAIMS

What is claimed is:

*Sub 15*

An electronic circuit for sensing an output of a sensor, the electronic circuit comprising

at least one electrode pair for sensing a parameter, the at least one electrode pair having a first electrode and a second electrode, wherein the first electrode wraps at least partially around the second electrode; and  
circuitry for processing the parameter.

2. The electronic circuit of Claim 1, wherein the first electrode wraps around the second electrode in a U-shaped fashion.
3. The electronic circuit of Claim 1, wherein the first electrode wraps around the second electrode by surrounding three sides of the second electrode.
4. The electronic circuit of Claim 1, wherein a layout of the first electrode and a second electrode minimizes cross coupling between the first electrode and the second electrode.
5. The electronic circuit of Claim 1, further comprising a reference electrode for setting a reference voltage for the at least one electrode pair.
6. The electronic circuit of Claim 5, wherein the reference voltage set on the reference electrode is about 0.5 volts.
7. The electronic circuit of Claim 1, wherein the circuitry comprises  
a line interface for interfacing with input/output lines;  
a rectifier in parallel with the line interface;  
a counter connected to the line interface; and  
a data converter connected to the counter and the at least one electrode pair.

8. The electronic circuit of Claim 7, further comprising control logic connected to the counter and the line interface.

9. The electronic circuit of Claim 8, wherein the control logic comprises  
a state machine; and  
a state decoder connected to the state machine.

10. The electronic circuit of Claim 8, wherein the control logic comprises a microprocessor.

11. The electronic circuit of Claim 7, wherein the rectifier transfers power from communication pulses to a capacitor.

12. The electronic circuit of Claim 11, wherein the capacitor powers the electronic circuit using power stored from the communication pulses.

13. The electronic circuit of Claim 7, wherein the data converter is an analog-to-digital converter.

14. The electronic circuit of Claim 7, wherein the data converter is an voltage-to-frequency converter.

15. The electronic circuit of Claim 7, wherein the data converter is a current-to-frequency converter.

16. The electronic circuit of Claim 15, wherein an output of the current-to-frequency converter is scaled using a prescaler before connecting to the counter.

17. The electronic circuit of Claim 16, wherein the prescaler is a divide-by-16 prescaler.

18. The electronic circuit of Claim 7, wherein the circuitry further comprises a temperature sensor for reading a temperature of an environment; and a voltage reference for applying a voltage to a reference electrode.

19. The electronic circuit of Claim 7, further comprising switched capacitor circuits for use as resistors in the electronic circuit.

20. The electronic circuit of Claim 1, wherein the parameter sensed by the at least one electrode pair is a physiological parameter.

21. The electronic circuit of Claim 20, wherein the physiological parameter sensed is glucose.

22. The electronic circuit of Claim 20, wherein the physiological parameter sensed is oxygen.